

What is claimed is:

1           1.       A method for use in communications involving a first terminal that is  
2 coupled to one side of a firewall and network address translator, the method comprising:  
3                sending, by the first terminal, a message identifying the first terminal to a  
4 node on another side of the firewall and network address translator;  
5                receiving, by the first terminal, another message from the node, wherein  
6 the messages between the first terminal and the node causes creation of a path through  
7 the firewall and network address translator; and  
8                repeatedly sending keep-alive messages to maintain the path through the  
9 firewall and network address translator.

1           2.       The method of claim 1, further comprising receiving a call request, by the  
2 first terminal, from the node over the path maintained through the firewall and network  
3 address translator.

1           3.       The method of claim 1, wherein repeatedly sending the keep-alive  
2 messages is based on a timer in the first terminal.

1           4.       The method of claim 1, wherein sending the identifying message  
2 comprises sending a registration message to register the first terminal with the node.

1           5.       The method of claim 4, wherein sending the registration message  
2 comprises sending a Session Initiation Protocol REGISTER message.

1           6.       The method of claim 5, wherein sending the registration message  
2 comprises sending the registration message to a Session Initiation Protocol proxy, the  
3 node comprising the Session Initiation Protocol proxy.

1           7.       The method of claim 1, further comprising exchanging messages, by the  
2 first terminal, with the node over the path maintained through the firewall and network  
3 address translator to establish a call session.

1           8.     A system for use in communications between a first terminal and a second  
2 terminal, the first terminal coupled to a remote network address translator, the system  
3 comprising:

4                     a storage module to store network address translation information for the  
5 first terminal; and

6                     a controller adapted to partially create the network address translation  
7 information during setup of a communications session between the first and second  
8 terminals and to wait for a media packet originated by the first terminal after the  
9 communications session has been set up to complete the network address translation  
10 information.

1           9.     The system of claim 8, wherein the media packet contains a source  
2 address, the source address comprising a public address that is allocated to the first  
3 terminal by the remote network address translator.

1           10.    The system of claim 9, wherein the public address of the first terminal is  
2 unknown to the controller until after the media packet has been received.

1           11.    The system of claim 10, wherein the controller is adapted to further  
2 exchange control packets with a device containing the remote network address translator  
3 to set up the communications session between the first and second terminals.

1           12.    The system of claim 11, wherein at least one of the control packets from  
2 the device contains an identifier to identify a private address of the first terminal that is to  
3 be used for communications of media packets.

1           13.    The system of claim 12, wherein the controller is adapted to ignore the  
2 private address of the first terminal for communicating media packets between the first  
3 and second terminals.

1           14.    The system of claim 11, wherein the control packets comprise Session  
2   Initiation Protocol control packets.

1           15.    The system of claim 14, wherein the media packet contain Real-Time  
2   Protocol data.

1           16.    The system of claim 14, wherein the media packet contains at least one of  
2   the following types of data: file transfer data, interactive electronic gaming data, and  
3   whiteboarding data.

1           17.    The system of claim 8, wherein the network address translation  
2   information comprises information to map a network address of the first terminal to an  
3   alias address of the first terminal.

1           18.    The system of claim 17, wherein the network address translation  
2   information further comprises information to map a network address of the second  
3   terminal to an alias address of the second terminal.

4           19.    The system of claim 17, wherein the controller is adapted to transmit  
5   media packets originated by the first terminal to the second terminal, each media packet  
6   containing the first terminal alias address as a source address.

1           20.    The system of claim 8, wherein the controller comprises plural modules,  
2   the plural modules comprising a first module adapted to exchange call control signaling  
3   and a second module adapted to exchange media packets between the first and second  
4   terminals.

1           21.    An article comprising at least one storage medium containing instructions  
2   for establishing communications between a first terminal and a second terminal, the  
3   instructions when executed causing a system to:

4                   store network address translation information for the first terminal that  
5   resides behind a remote network address translator;

6                   partially create the network address translation information during setup of  
7   a communications session between the first terminal and the second terminal; and

8                   wait for a media packet originated by the first terminal after the  
9   communications session has been set up to complete the network address translation  
10   information.

1           22.    The article of claim 21, wherein the instructions when executed cause the  
2   system to store network address translation information containing fields to map an  
3   address of the first terminal to a first alias address and to map an address of the second  
4   terminal to a second alias address.

1           23.    The article of claim 22, wherein the instructions when executed cause the  
2   system to further:

3                   communicate, through the system, media packets between the first and  
4   second terminals, each media packet containing a source address and a destination  
5   address; and

6                   translate, for each media packet, both the source and destination addresses.

1           24.    The article of claim 21, wherein the media packet from the first terminal  
2   contains a source address, the source address comprising a public address that is allocated  
3   to the first terminal by the remote network address translator, the public address of the  
4   first terminal being unknown to the system until after the media packet has been received.

1           25.    A device capable of being used in communications through a firewall and  
2 network address translator, the device comprising:

3                   an interface adapted to exchange messages with a node on another side of  
4 the firewall and network address translator, the exchange of messages with the node to  
5 create a path through the firewall and network address translator; and

6                   a controller adapted to repeatedly send keep-alive messages to maintain  
7 the path through the firewall and network address translator.

1           26.    The device of claim 25, further comprising a timer to determine timing of  
2 the keep-alive messages.

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